

IN THE CLAIMS

Please amend the claims as follows:

1-14. (Canceled)

15. (Currently Amended) A system comprising:

a first die;

a second die; and

a capacitor including a plurality of plated through holes coupling at least four conductive layers embedded in a dielectric to a plurality of connection sites ~~eites~~ and having a first surface having a controlled collapse chip connection coupled to the first die and a second surface having a controlled collapse chip connection coupled to the second die.

16-29. (Canceled)

30. (Currently Amended) ~~The system of claim 13,~~

A system comprising:

a die including an electronic system;

a capacitor located less than about .1 millimeter from the die and coupled to the die,
wherein the capacitor is capable of decoupling a power supply connection at the die without
additional capacitors located external to the die, and wherein the capacitor comprises palladium;
and

a dielectric layer located between the capacitor and the die.

31. (Original) The system of claim 30, wherein the capacitor comprises barium titanate.

32. (Original) The system of claim 31, wherein the barium titanate is formed from sheets having a thickness of between about five and about seven microns.

33. (Original) The system of claim 15, wherein the at least four conductive layers comprise platinum.

34. (Original) The system of claim 33, wherein the first die comprises silicon.

35. (Currently Amended) ~~The system of claim 16,~~

A system comprising:

a first die;

a second die; and

a capacitor having a first surface having a controlled collapse chip connection coupled to the first die and a second surface having a controlled collapse chip connection coupled to the second die, wherein the first die includes a processor and the second die includes a communication system, and wherein the capacitor comprises a plurality of dielectric sheets having at least two different thicknesses.

36. (Original) The system of claim 35, wherein the first die and the second die comprise silicon.

37. (Currently Amended) ~~The system of claim 18,~~

A system comprising:

a substrate having a first surface and a second surface;

a die coupled to the first surface; and

a capacitor having a plurality of plated through holes coupled to a plurality of conductive layers in the capacitor, the capacitor is coupled to the second surface by a controlled collapse chip connection and the capacitor is electrically coupled to the die through the substrate, and wherein the capacitor includes a high voltage site surrounded by four low voltage sites.

38. (Original) The system of claim 37, wherein each of the plurality of conductive layers comprises palladium.

39. (Canceled)

40. (Currently Amended) ~~The system of claim 39,~~

A system comprising:

a processor requiring at least 5 watts of power to be operable; and

a single multilayered single package capacitor coupled to the processor and capable of decoupling a power supply from the processor, wherein the single multilayered single package capacitor comprises barium titanate and platinum.

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 30, 2003, and the references cited therewith.

Claims 15, 30, 35, 37, and 40 are amended, and claims 13, 14, 16, 18-23, and 39 are canceled; as a result, claims 15, 30-38, and 40 are now pending in this application.

Claim Objection

Claims 15, 33, and 34 were objected to due to informalities. Applicant has amended claim 15 to change the work “cites” to –sites--. Claims 33 and 34 depend from claim 15. Accordingly, Applicant believes that the objection to claims 15, 33, and 34 has been overcome, and respectfully requests that the Examiner reconsider and withdraw the objection.

§103 Rejection of the Claims

Claims 13 and 14 were rejected under 35 USC § 103(a) as being unpatentable over Herrell et al. (U.S. 6,191,479). Claims 13 and 14 have been canceled, and thus Applicant believes this rejection to be moot. Applicant does not necessarily agree with the rejection, and reserves the right to traverse the rejection at a later time if claims 13 and 14 are reintroduced in this Application or a related application.

Claim 16 was rejected under 35 USC § 103(a) as being unpatentable over Farooq et al. (U.S. 6,228,682) in view of Stone (U.S. 5,530,288) and Ahn et al. (U.S. 6,274,937). Claim 16 has been canceled, and thus Applicant believes this rejection to be moot. Applicant does not necessarily agree with the rejection, and reserves the right to traverse the rejection at a later time if claim 16 is reintroduced in this Application or a related application.

Claim 18 was rejected under 35 USC § 103(a) as being unpatentable over Tosaki et al (U.S. 6,272,020) in view of Naito et al (U.S. 6,034,864), Bhatt et al. (U.S. 6,178,093) and Farooq et al.. Claim 18 has been canceled, and thus Applicant believes this rejection to be moot. Applicant does not necessarily agree with the rejection, and reserves the right to traverse the rejection at a later time if claim 18 is reintroduced in this Application or a related application.

Claims 19 and 20 were rejected under 35 USC § 103(a) as being unpatentable over Tosaki et al. in view of Naito et al., Bhatt et al., Farooq et al. and Ahn et al.. Claims 19 and 20 have been canceled, and thus Applicant believes this rejection to be moot. Applicant does not necessarily agree with the rejection, and reserves the right to traverse the rejection at a later time if claims 19 and 20 are reintroduced in this Application or a related application.

Claims 21-23 were rejected under 35 USC § 103(a) as being unpatentable over Herrell et al. in view of Giri et al. (U.S. 6,037,044). Claims 21-23 have been canceled, and thus Applicant believes this rejection to be moot. Applicant does not necessarily agree with the rejection, and reserves the right to traverse the rejection at a later time if claims 21-23 are reintroduced in this Application or a related application.

Allowable Subject Matter

Claims 15, 33, and 34 were indicated to be allowable if base claim 15 is rewritten or amended to overcome the objection set forth in the Office Action. Applicant has so amended claim 15, and therefore believes claims 15, 33, and 34 to be in a condition for allowance.

Claims 30-32, 35-36, 37-38, and 40 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has amended claims 30, 35, 37, and 40 to include all of the limitations of their respective base claims and any intervening claims. Claims 31, 32, 36, and 38 depend from these amended, and now independent, claims. Accordingly, Applicant believes that the objection to claims 30-32, 35-36, 37-38, and 40 has been overcome, and respectfully requests that the Examiner reconsider and withdraw the objection.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

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Title: HIGH PERFORMANCE CAPACITOR

Assignee: Intel Corporation

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Sherry Schumm at (480) 657-3766, or the below signed attorney to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

LARRY E. MOSLEY

By his Representatives,

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Date Sept. 30, 2003

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 30th day of September, 2003

Name: Anne M. Richards

Signature

